

The impact of digital financial awareness on the adoption of digital finance services

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Abstract: The study will focus on the effect of digital financial awareness on both implementation of digital financial services within the Iraqi banking industry and considering the high paces at which the global financial industry is undergoing digitalization and electronic transformation. The methodology used in the research is a descriptive-analytical approach since it is an appropriate methodology in measuring and interpreting the correlation between the research variables.

A survey using a questionnaire was developed and sent to a group of staff of various Iraqi privately-owned banks. The research model incorporates an independent variable, which is digital financial awareness, with its dimensions (financial knowledge, digital literacy, practical experience, awareness, decision-making, and self-protection), and dependent variable, which is digital financial services adoption, with its dimensions (adoption and use of digital financial services, perceived ease of use and satisfaction, and freedom and security). The research hypotheses were tested through a set of suitable statistical tools, structural equation modeling (SEM) with the help of SmartPLS software. An SPSS program was also used to perform a descriptive examination of the two variables of the study.

Those findings allow concluding that digital financial awareness can positively influence the utilization of digital financial services in Iraqi banks significantly, and higher customer awareness and digital skills will lead to a higher use of modern banking technologies. Another recommendation of the research is that the Iraqi banks should pursue the integration strategy of encouraging the concept of digital financial literacy, awareness, and training programs delivered to diverse customer groups, and enhance the digital infrastructure of the banks to guarantee the security, efficiency, and convenience of the electronic banking transactions.

Keywords: Digital financial awareness, digital financial services, digital knowledge

1-Introduction: Financial technology (FinTech) has sparked radical transformation in the world in digital financial practice in the last ten years, and has changed the nature of banking, investment and payment systems. Its transformative effect is inadmissible, which has made it possible to provide unprecedented efficiency and access to digital financial services. Such fundamental change brings up a critical question: How can more mobility and access to digital financial services influence the financial decisions of people?

The Digital financial technology (FinTech) has transformed the financial world because it simplifies financial transactions and manages resources to a considerable level. To learn about this transformation, it is necessary to conduct extensive research on the connection between digital financial awareness and the utilization of digital financial services on the one hand and their effects on financial decision-making on the other hand. The recent studies affirm that digital financial awareness has a strong connection with the utilization of digital financial services, where financially literate citizens make more successful financial decisions, whether by managing finances better or by having increased engagement with digital financial services.

This project is dedicated to the digital financial literacy by adopting the digital services in a sample of the Iraqi private banks. It is a ground breaking project to help in facilitating digitization and financial technology towards Iraq and specifically about the role of banks to play in ensuring the spread of financial awareness. Guidance, training, network access and financing that are offered by the private banks are vital resources that contribute to the success of the fintech projects. This research aims to know how such initiatives help in creating a culture of financial awareness and the objective of digital financial services in Iraq by looking at the experiences of developed nations in the same.

First axis

Research Methodology

First: Research Problem

The intensive growth of the digital financial services and numerous benefits and opportunities it presents, evident in the form of lower costs, time, and effort, but the extent of the usefulness of the services applied to the user is determined by the financial level of the individuals operating these technologies, accepting the services offered and the degree of security and protection of the information stored in the account.

In this respect, the research issue is the level of digital financial awareness of individuals which allows implementing digital financial services in a safe and effective manner, particularly within the banking setting, which is experiencing a rapid change in the digital technology landscape.

Second: The importance of the research

This study will help to deepen the information about the topic of digital financial awareness within the Iraqi setting as the portion of the awareness of people adopting digital financial services will be undertaken. The study will give information on the usage of these digital technologies and its forms that are viewed as effective means to deliver the objectives of financial development and financial stability particularly in the Iraqi scenario and what are the barriers and hindrances to the implementation of these services.

Third: Research Objectives

This financial awareness is an important factor in our present times. It is increasingly being understood that financial awareness is one of the most important elements of spending reduction and is a necessary means to an inclusive growth and a waste-minimizing tool.

The goal of this research is to determine the barriers hindering the use of digital financial services by customers and increase awareness about the same as well as its advantages. As part of customer retention, the study aims at motivating current clients in Iraq to use the digital financial services. Digital financial services include a broad spectrum of financial services accessed and provided using the digital medium, such as payments, credit, savings, money transfer, and insurance.

Fourth, research hypotheses

The current research is based on a main hypothesis that digital financial literacy has a significant impact on digital financial services. From this main hypothesis, six sub-hypotheses are derived as follows:

- Financial Knowledge has a positive impact on the delivery of digital financial services.
- Digital literacy has a positive impact on the delivery of digital financial services.
- Practical experience has a positive impact on the delivery of digital financial services.
- Awareness has a positive impact on the delivery of digital financial services.
- Decision-making has a positive impact on the delivery of digital financial services.
- Self-protection has a positive impact on the delivery of digital financial services.

Fifth: The hypothetical research plan

Figure (1) shows the hypothetical research framework.

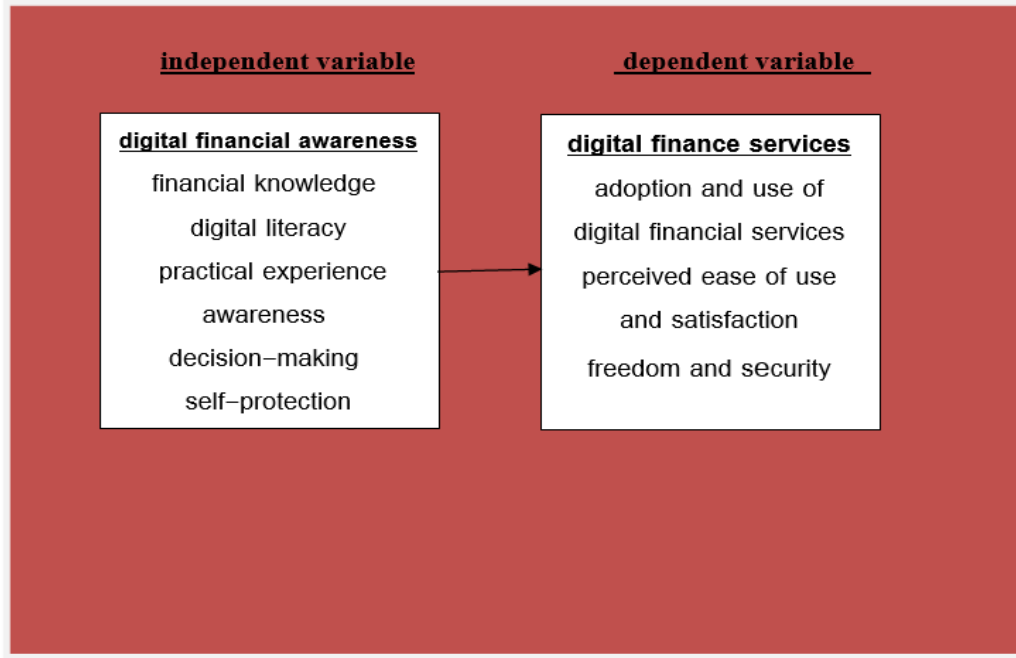


Figure (1) Hypothetical research plan

Sixth: Research population and sample

This research was conducted based on the opinions of a sample of employees in a number of Iraqi private banks regarding the use of digital financial tools by individuals. A random sample of (70) employees was selected, and (70) forms were distributed. (69) forms were returned, (1) invalid form was excluded, and (69) forms were valid for analysis, with a return rate of (96.9%). Here, the sample size became (n=69), which is suitable for the required number.

Second axis

Theoretical framework of research variables

First topic

Theoretical framework of the independent variable digital financial awareness

First: The concept of digital financial awareness

The term “financial awareness” was first coined by the British National Foundation for Educational Research (NFER) in a report prepared in 1992 and defined as the ability to make informed and effective decisions and judgments in managing money.

Digital financial awareness is a complex concept (According to Kumar et al:2023:348) it is the knowledge and ability of an individual in online financial transaction. This involves a variety of activities, which includes (but is not limited

to) online shopping, consumption of different electronic services, payment procedures and working around the complications of online banking.

Such knowledge includes skills to make financial choices and personal spending in the digital world using the necessary digital tools and platforms. At the same time, digital financial literacy is also a necessity when considering the changing digital financial environment (Prasad et al., 2018:349).

Digital financial awareness refers to knowledge, skills, and capabilities that are required in order to make sound and informed financial decisions. This literacy encompasses the knowledge of some simple financial concepts like budgeting, investing, managing debts, saving and understanding financial products and services (Huston, 2010:296). Digital financial literacy is critical to realizing the personal financial well-being and assists people to make decisions that can improve their financial security (Garg & Singh, 2018). High financial awareness is demonstrated to enable individuals to better manage their finances, prevent debt and increase wealth. Financial literacy is advisable in long-term financial health and making educated choices.

In its simplest form, digital financial awareness is the ability of a person to master the online financial transactions, such as online shopping, the ability to navigate through different electronic payment methods, and electronic banking systems. According to (Morgan et al, 2019:349), digital financial literacy was identified with four factors related to the concept, which are as follows:

First, there is "Understanding Digital Financial Products and Services" which is the knowledge of consumers regarding the different digital financial tools, applications, and platforms.

Second, there is "Risk Awareness" which deals with understanding the risks that may be involved with digital financial products and services.

Third, "Knowledge of Digital Financial Risk Management is the strategies and measures that would reduce these inherent risks in digital transactions.

Fourth, the key to the fourth position is the significance of awareness among consumers of their rights in the digital finance ecosystem and what to do with any conflicts.

Consequently, the learning of digital financial Knowledge is essential to people in order to utilize digital financial services successfully, as well as to know the potential dangers of the massive adoption of these technological innovations. Although the process of digitalization has significantly spread throughout every facet of everyday activity, there is still a gap in available information about the influence of digitalization on the financial behavior of individuals and the financial literacy as its consequence (Koskelainen et al., 2023:507).

Second: The importance of digital financial awareness

The necessity of societies to encourage digital financial awareness has been growing recently, considering the ongoing acceleration of the development of digital financial services and payments, the increasing growth of e-commerce, the enhancement of electronic financial disclosure systems, and the extensive proliferation of electronic banking over the Internet.

These changes have also helped in structural alterations in the old system of finance resulting in the rise of more digital dilemmas to both the consumers and investors in the context of the modern digital economic and financial landscape.

Good financial decisions require financial competence. With the computer economy, where the process of transactions is painless, and business opportunities are available in vast numbers, people require a well-founded idea of the financial principles to reduce the possible risks and use the opportunities offered to maximize the effect (Rahayu et al., 2022: 511).

As the digital banking services evolve at a high rate, digital financial awareness is a key determinant in ensuring that people can adjust well to this digital era. Financial concepts are becoming necessary in order to make informed

decisions and gain maximum advantages of digital banking as banking services are moving towards the electronic platform rather than the traditional one. (Rahayu et al. 2022:512)

Using digital banking, one can access a diversity of financial literacy programs, resources, and educational applications to assist people in acquiring financial literacy and skills. Whether it is the assistance of helpful articles or interactive tools, these tools are allowing users to make wise financial choices and accomplish their financial targets in the digital era. (Lyons and Kass-Hanna, 2021:1113)

To conclude, with the digital banking system influencing the financial environment, the issue of financial awareness is of paramount concern. They can make sound financial choices, learn to use digital banking platforms effectively to seize opportunities and can create a more secure financial future by providing people with the knowledge and skills on how to use digital banking platforms.

Digital financial awareness is emphasized in the following: (Koskelainen et al., 2023:514). 1. It has become top of the agenda of individuals and institutions.

2. It has been made an activity precondition to financial stability.

3. The digital financial technology has seen access to a greater number of people at a reduced cost, particularly, those residing in rural communities.

4. It helps in lessening the financial crisis through formulation of well thought out strategic financial plans to minimize risks.

Third: Dimensions of digital financial awareness

Researchers and authors have explored many dimensions of digital financial awareness in an attempt to explore its different dimensions. Thus, the dimensions will be studied and explored separately in order to have a holistic picture. The chosen items of digital financial awareness are the most prevalent in the literature (Lyons and Kass Hanna, 2021).

1. Financial wisdom: This entails the knowledge of the rudimentary financial instruments like accounts, compound interest, inflation, and risk diversification. It is possible to test financial knowledge in an objective and subjective way. The objective assessment, which is popular among researchers is a financial awareness approach that articulates financial knowledge as the understanding of different concepts and risks involving the financial sector including the capacity to utilize the knowledge in making relevant and effective financial decisions to help the individual as well as his community to gain financial wellness. People are required to have the fundamental skills and financial knowledge required to handle good financial affairs. (Amalia et al., 2023:362)

2. Digital literacy: Digital literacy encompasses general knowledge and ability to use basic instruments, such as sorting and storing data on computers, tablets and mobile phones, creating and accessing accounts and controlling privacy preferences. The unavailability of skills and knowledge required to use and manipulate information and communication technologies is a big obstacle to digital competence promotion (Lyon and Cass-Hanna, 2021).

3. Practical experience: The work of digital financial services presupposes awareness and practical experience of working with the corresponding operational and technical conditions. Practical experience: This is the skills and knowledge that are needed in order to gain access and use digital financial services. This encompasses their efficiency where consumers can easily access such services and be able to be effective and manage their day to day finances. The more frequently consumers use the use of modern financial technology, the more likely they are to have experience using digital financial services (Malady, 2016: 389).

4. Awareness: The Organization for Economic Co-operation and Development (OECD, 2018) refers to awareness as the degree of knowledge and understanding of the people about the purposes, functions, benefits and risks of the different digital financial services which include mobile banking, e-wallets, digital credit and e-money. This is in terms of being able to differentiate between trusted and untrusted services, and regulated and unregulated online financial transactions. This involves updating themselves with new digital developments as well. The creation of

awareness can also have a positive effect on the intentions of customers to use and adopt digital financial services (Rai and Sharma, 2019: 216).

5. Decision-making: The dimension of decision-making has two sub-dimensions, i.e. the positive financial attitudes and the positive financial behaviors via digital financial services. The positive financial attitudes lead to healthy financial results, including appropriate day-to-day financial management, saving and retirement planning self-discipline and prudent borrowing. Positive financial behaviors via digital financial services mean the capability to make conscientious choices regarding the choice of suitable digital financial service and provider. Financial decision-making entails the individuals making various financial choices to increase their wealth (Kumar et al., 2023:350).

6. Self-protection: Self-protection is the pre-emptive actions that self-protect against fraud (phishing, identity theft, credit card fraud, investment fraud and cyberattacks). It is also accompanied by self-education and advancements of skills in the area of information security to be more equipped to fight the threats linked to digital financial services. (Dewi et al, 2020:24).

Second topic

Theoretical framework of the dependent variable Digital financial services

First: The concept of digital financial services

These transformations were radically driven by the modern industrial revolution. The financial industry underwent profound changes that transformed traditional financial services into modern ones, facilitating access to financial services and making the financial system faster, more flexible, and efficient, as well as accelerating the pace of development. Consequently, these services have taken the form of digital financial services, based on financial technology (FinTech), within the framework of the shift towards a digital economy and the promotion of innovation in financial transactions.

Digital financial services refer to the use of digital platforms to deliver financial services and products directly to customers' digital devices, such as mobile phones or payment cards. These services differ from traditional financial service delivery models based on conventional bank branches or microfinance institution staff. Digital platforms allow financial institutions to interact directly with their customers while minimizing their physical presence in the area, which in principle enables financial inclusion at lower transaction costs and on a wider scale. Most customer-centric digital financial service systems rely on customers' existing mobile phones through digital applications, raising their financial literacy rather than issuing bank cards. This reduces the cost of setting up the service per customer and provides a higher level of interaction with the service. (Seldal & Nyhus, 2022:45)

Digital financial services are defined as a set of information and transaction services delivered through the web and other electronic channels and networks, such as the internet, which enable the execution of electronic transactions with a high level of efficiency and flexibility (Syed et al., 2022: 23).

(Siddiqa et al, 2023:88) suggested that the term banking refers to a set of financial and banking activities, represented by money-related operations, such as withdrawals, deposits, transfers, and balance inquiries, carried out through Internet networks, mobile phones, or other electronic devices.

In short, digital financial services refer to digital activities offered by financial institutions, companies or governments to customers, enabling them to manage their financial operations and meet their financial needs effectively.

Second: The importance of digital financial services

Digital financial services can be seen as mechanisms for delivering the two basic functions of money in digital form: as a store of value (funds stored in digital accounts, such as savings) and as a means of payment (transfer of funds between accounts). When money and transactions are digital, they can be treated as individual entries and updates within a network of accounts that all users can join. Digital financial services accounts thus become access points for individuals to a global, cheap, instant and multipurpose digital payment network. This represents an ambitious vision for the future of financial systems (Shaukat et al., 2025: 13).

The importance and benefits of digital financial services are many and diverse, including the following (Shaukat et al., 2025: 14):

- 1- Online communication: A person may be a financial traveler in the city center who needs to send money to family members in distant places.
- 2- Business Transactions: An entrepreneur can collect payments from customers in remote areas before shipping the goods to them.
- 3- Payroll payments: Employers can use digital financial services to pay salaries to geographically dispersed workers.
- 4- Savings management: Members of savings groups can rely on digital financial services to keep surplus funds readily available and safe.
- 5- Savings and financial security: Individuals can use digital financial services to save money for their children's education and future needs or to prepare for medical emergencies.
- 6- Payments and obligations: Digital financial services facilitate the payment of regular life insurance premiums, utility bills and other public services.
- 7- Advanced digital services: These services also include cryptocurrency and blockchain-based applications, such as smart contracts and digital financial settlement systems.

Banking services can be accessed even in the absence of nearby bank branches, as all this is possible through access to digital payment networks or systems. By enabling micropayments that reach millions of users, digital payment networks also contribute to broader innovation in microfinance and other related sectors.

Third: Factors affecting digital financial services

Many factors influence the use of digital financial services by customers, including mobile banking and other network-based services. These factors include speed of transaction alerts, ease of completing transactions, low service costs, fast processing times, and overall customer satisfaction. The use of digital financial services, especially mobile banking, has changed the behavior of both individuals and businesses. Mobile banking has become more popular than online banking and ATMs due to its availability and convenience. Information technology contributes to financial literacy to a greater extent in developed economies than in developing economies, with digitization as an important driver of economic growth in developed countries. In contrast, developing and emerging economies have focused on mobile banking and its important role in promoting financial literacy (Rahman and Rahman, 2023: 409).

Fourth: Digital Financial Service Delivery Tools

(Ahlem et al,2023:2959) identified several channels for providing financial services, which are as follows:

1- Automated Teller Machines (ATMs): The first ATM appeared in Britain (London) in 1967. The main function of the machine was to reduce transactions within banks, i.e., as an alternative to a cashier. The ATM is considered the beginning of the development of financial and banking work and has developed over time in terms of the services it provides, from depositing and withdrawing money, paying bills, checking balances, and transferring money from one account to another.

2- Mobile phone: Mobile phone services began initially in the late 1990s, and were limited to limited services such as sending text messages and checking balances. Over time, they developed and expanded significantly during the first decade of the 21st century, to become today one of the essential and important pillars of digital financial services and the shift towards the digital economy.

3- Electronic Bank: An electronic bank is defined as a banking organization that has a complete digital presence on the Internet. Its website contains all the technologies and applications necessary to conduct banking business. This type of bank enables customers to carry out all their banking transactions electronically at any time and in any place, through digital channels provided by the bank, without the need to come to the bank's headquarters.

4- Electronic wallet: The electronic wallet is considered one of the most important digital financial services tools because of the speed and security it provides in completing financial transactions. It also helps to reduce reliance on

cash, i.e., saving money electronically and conducting transactions through digital platforms linked to communication networks and the internet, and it contributes widely to e-commerce.

Fifth: Dimensions of digital financial services

There are several dimensions of digital financial services that have been pointed out by many writers and researchers, and by reviewing the relevant literature, a set of main dimensions can be extracted that explain the nature of these services as discussed by: (Vieira et al, 2024:19), (Showkat, et al, 2025:32).

1- Adoption and use of digital financial services: This dimension emphasizes the importance not only of accessing digital financial services, but also of adopting and interacting with them efficiently and effectively. Adopting and using these digital financial services continuously is essential for individuals to fully benefit from the advantages of these services, particularly with regard to the type of these services. This dimension is based on work that emphasizes accessing and using financial services effectively and securely to achieve financial stability for the individual.

2- Perceived ease of use and satisfaction: This dimension reflects the importance of ease of use and perceived satisfaction in digital financial services for their adoption and continued use. The framework for understanding this aspect is based on the technology acceptance model, as proposed by Davis (1985), which emphasizes the importance of user acceptance, ease of use, and perceived satisfaction in technology adoption, including digital financial services.

3- freedom and security: This dimension explores the role of digital financial services in promoting financial independence and security, particularly for individuals. The use of digital financial services can contribute to empowering individuals by giving them more control over their financial decisions, thereby improving their financial independence and security. This concept aligns with the transformative potential of digital financial instruments in empowering users and is a key aspect of promoting financial inclusion and improving economic independence.

Third axis

The practical aspect of the research

First topic

First: Descriptive analysis of the research variables

Descriptive analysis is a core statistical tool that is applicable in order to comprehend the nature of data and its dispersion in a study group. It allows the researchers to identify the prevalence of the variables being studied in the target population. Such an analysis is based mainly on two major statistical measures, the arithmetic mean, which demonstrates the tendency of centrality of the data and characterizes its overall direction, and the standard deviation, which demonstrates the extent of the dispersion or difference between the responses of the sample members, thereby making the extent of convergence or deviation of the responses of the sample members clear.

Using the descriptive analysis, the researchers have the opportunity to infer the general trends in the analyzed variables and get the initial indicators of the behavior and perceptions of the respondents. This gives good scientific basis towards proceeding through the later stages of analysis, especially analysis of relationships among variables as well as testing the research hypotheses.

In that regard, the results in terms of the arithmetic means and standard deviations of each one of the study variables will be presented below.

1- Descriptive statistics of the variable of digital financial awareness.

The descriptive analysis of the digital financial awareness variable was done using SPSS version 27 as indicated in Table 1. The findings showed that the arithmetic means of all the items in the scale were greater than the hypothetic mean of 3 on a five-item Likert scale, reflecting that there was positive level of digital financial awareness in the organization of the study.

It was also indicated in the descriptive analysis that the standard deviations were relatively low which indicated that there was high level of consistency in the response of the sample members and not much variation between them. This makes the data reliable and ensures that the items and their understanding by the respondents are admirable.

Such an overlapping of the responses means that there is a high level of agreement between the sample members in terms of the degree of digital financial literacy embraced by the organization, which gives the statistical foundation to

further analyses, in particular, testing the research hypotheses and estimating the correlations between the studied variables.

1- Descriptive analysis of the digital financial awareness variable

Using SPSS version 27, the descriptive analysis of the digital financial awareness variable was performed, as shown in Table 1. The results indicated that the arithmetic means for all items on the scale exceeded the hypothetical mean of 3 on a five-point Likert scale, demonstrating a positive level of digital financial awareness within the organization under study.

The descriptive analysis also showed relatively low standard deviations, reflecting a high degree of consistency in the responses of the sample members and limited variance among them. This strengthens the reliability of the data and confirms the clarity of the items and the respondents' understanding of them.

This convergence in responses reflects a significant degree of agreement among the sample members regarding the level of digital financial literacy adopted by the organization, providing a solid statistical basis for subsequent analyses, particularly testing the research hypotheses and analyzing the relationships between the studied variables.

Table (1) Descriptive Analysis of the Digital Financial Awareness Variable

| variable | Dimension | Paragraph code | arithmetic mean | standard deviation |
|-----------------------------|----------------------|----------------|-----------------|--------------------|
| digital financial awareness | financial knowledge | X1-1 | 3.4590 | 0.85699 |
| | | X1-2 | 3.1985 | 0.99153 |
| | | X1-3 | 3.5011 | 0.77361 |
| | | X1-4 | 3.3059 | 0.72514 |
| | digital literacy | X2-1 | 3.5667 | 0.74621 |
| | | X2-2 | 3.2985 | 0.76031 |
| | | X2-3 | 3.2809 | 0.80861 |
| | | X2-4 | 3.4327 | 0.94774 |
| | practical experience | X3-1 | 3.2248 | 0.78743 |
| | | X3-2 | 3.4117 | 0.63571 |
| | | X3-3 | 3.2775 | 0.94637 |
| | | X3-4 | 3.2151 | 0.83601 |
| | awareness | X4-1 | 3.5722 | 0.76615 |
| | | X4-2 | 3.5538 | 0.78941 |
| | | X4-3 | 3.5143 | 0.74804 |
| | | X4-4 | 3.4322 | 0.66304 |
| | decision-making | X5-1 | 3.3643 | 0.67732 |
| | | X5-2 | 3.3072 | 0.80631 |
| | | X5-3 | 3.1625 | 0.81626 |
| | | X5-4 | 3.3932 | 0.78697 |
| self-protection | X6-1 | 3.6854 | 0.8453 | |
| | X6-2 | 3.5012 | 0.86476 | |
| | X6-3 | 3.5538 | 0.96944 | |
| | X6-4 | 3.3038 | 1.05161 | |
| overall average | | | 3.38127 | 0.793458 |

Reference: SPSS V. 27 output

2- Descriptive analysis of the digital financial services variable

The variable of digital financial services was analyzed descriptively using the SPSS version 27 and the results are illustrated in Table 2. The findings revealed that the arithmetic means of each of the items on the scale was greater than the hypothetical mean of 3 on five-point Likert scale. This is an indication of a positive prevalence of such items among the members of the surveyed organization which indicates the extent of digital financial services in the organizational environment under investigation.

The standard deviation also showed that the level of standard deviation was relatively low meaning that there was high level of consistency in the respondents answers and they had slightly different values among themselves. This enhances the credibility of the data and its appropriateness in the latter statistical computations.

Such congruency in answers indicates the understandability of the items and good comprehension of the sample with respect to digital financial services. This has a strong statistical foundation of supporting conclusions and analysis of the evaluation of digital financial services and their correlation to other variables in the study.

Table (2) Descriptive Analysis of the Digital Financial Services Variable

| Variable | Dimension | Paragraph code | arithmetic mean | standard deviation |
|----------------------------|--|----------------|-----------------|--------------------|
| Digital Financial Services | adoption and use of digital financial services | Y11 | 3.5898 | 0.98921 |
| | | Y12 | 3.7872 | 0.97591 |
| | | Y13 | 3.6556 | 0.96181 |
| | | Y14 | 3.3135 | 1.30303 |
| | perceived ease of use and satisfaction | Y21 | 3.7609 | 0.98175 |
| | | Y22 | 3.6425 | 1.00501 |
| | freedom and security | Y31 | 3.603 | 0.96364 |
| | | Y32 | 3.7477 | 1.07259 |
| | | Y33 | 3.853 | 0.89292 |
| | overall average | | | 3.612856 |

Reference: SPSS V. 27 output

Second topic

Impact Hypothesis Testing

The hypothesis of the research is that the positive correlation between the digital financial literacy variable and the variable of digital financial services is statistically significant. In order to verify this hypothesis, a structural model has been created as depicted in K Figure 2 that depicts the perceived relationship between the two variables in the context of structural equation modeling with the use of PLS-SEM.

To confirm that the relationship between the two variables is statistically significant, the testing the hypothesis in question results are provided in Table 3 that contains the path coefficients and t-values achieved after the Bootstrapping procedure. With the help of this kind of analysis, the strength of the relationship in digital financial awareness and digital financial services can be measured, the importance of the direct effect of digital financial

literacy on digital financial services can be assessed, according to the statistical criteria of scientific research. (Hair et al., 2017).

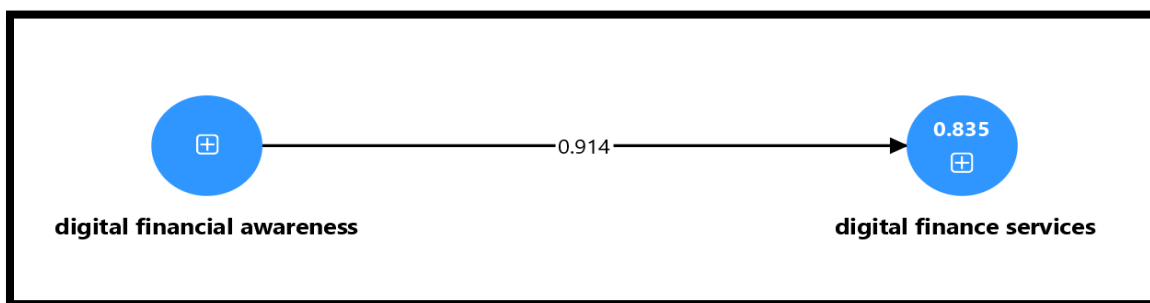


Figure (2) The structural model for testing the main effect hypothesis

Explanatory note regarding the structural model:

The numbers on the arrows represent the path coefficients, which express the strength and direction of the direct influence between variables within the model. The numbers inside the circles indicate the coefficient of determination (R²) for each dependent variable, which shows the amount of variance explained in the dependent variable by the independent variables.

The symbol [+] indicates that the dependent items of a variable are hidden when not needed for evaluating the structural model, in order to simplify the model and improve its clarity while focusing on the main relationships between the variables..

Reference: SmartPLS program outputs

Table (3) Results of the structural model evaluation of the main impact hypothesis

| SRMR Quality of conformity | Hypothesis | The path | Path coefficient | t Value | p Value | Result | Coefficient of determination R ² |
|----------------------------|------------|----------|------------------|---------|---------|------------|---|
| 0.07 | H1 | X→Y | 0.914 | 15.614 | 0 | acceptance | 0.835 |

Reference: SmartPLS program outputs

Table (3) presents the results of the structural model evaluation for the main effect hypothesis, which states that digital financial literacy has a statistically significant positive impact on digital financial services. The results showed that the standardized SRMR value was (0.07), which is below the acceptable limit of (0.08), indicating that the model shows good agreement with the observed data according to PLS-SEM criteria.

The path coefficient between digital financial literacy and digital financial services was (0.914), and it met the necessary statistical conditions in terms of t-value and significance level (p-value). This confirms the presence of a significant direct effect of digital financial literacy on digital financial services. Consequently, the main hypothesis can be accepted.

Furthermore, the coefficient of determination (R²) for the dependent variable was (0.835), indicating that digital financial literacy explains about 83% of the variation in digital financial services, while the remaining variation is due to other factors not included in this study.

First: Testing the sub-hypotheses of the main effect hypothesis

The researcher constructed the structural model presented in Figure (3) to test the sub-hypotheses of the main effect hypothesis (H1-1, H1-2, H1-3, H1-4, H1-5, and H1-6). The results of this model are reported in table (4).

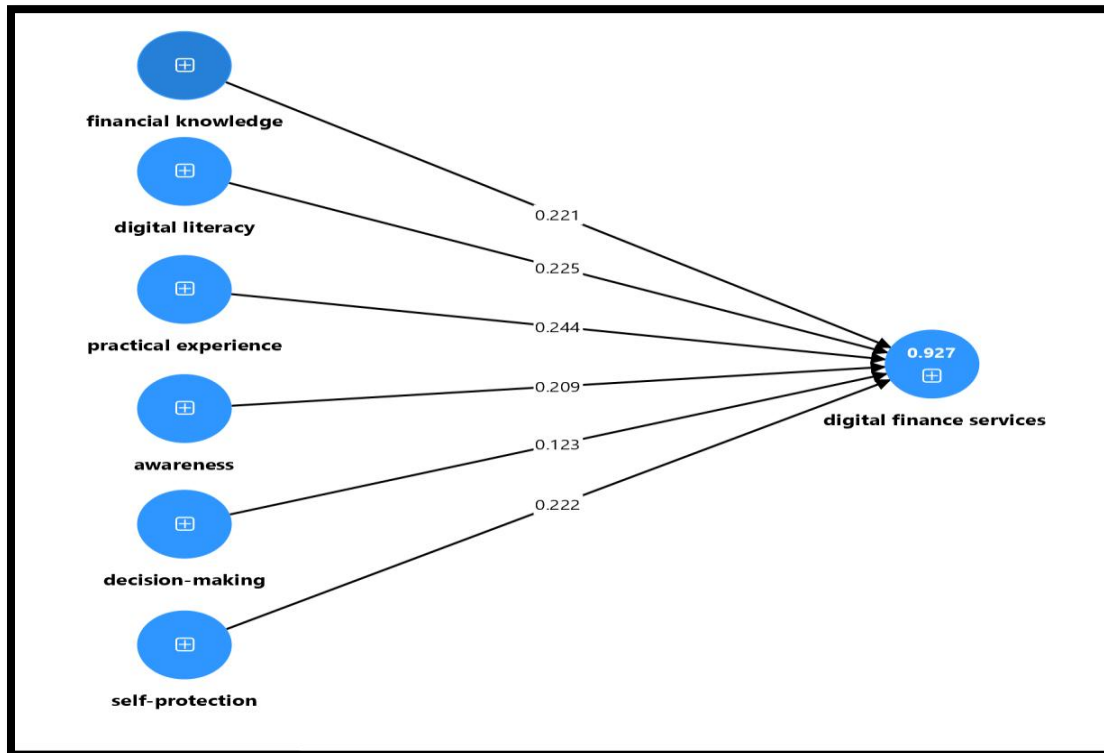


Figure (3) The structural model for testing the first sub-hypotheses

Reference: SmartPLS program outputs

Table (4) Results of the evaluation of the special structural model and sub-hypotheses of the main effect hypothesis

| Quality of conformity SRMR | Hypothesis | The path | Path coefficient | t Value | p Value | Result | Coefficient of determination R ² |
|----------------------------|------------|----------|------------------|---------|---------|------------|---|
| 0.06 | H1-1 | X1→Y | 0.221 | 5.103 | 0.000 | acceptance | 0.857 |
| | H1-2 | X2→Y | 0.225 | 5.010 | 0.000 | acceptance | |
| | H1-3 | X3→Y | 0.244 | 6.745 | 0.000 | acceptance | |
| | H1-4 | X4→Y | 0.209 | 4.956 | 0.000 | acceptance | |
| | H1-3 | X3→Y | 0.123 | 3.247 | 0.000 | acceptance | |
| | H1-3 | X3→Y | 0.222 | 6.004 | 0.000 | acceptance | |

Reference: SmartPLS program outputs

Table (4) presents the results of the evaluation of the structural model for the sub-hypotheses derived from the main effect hypothesis, which examines the impact of the dimensions of digital financial literacy variables on digital financial services. The results show that the standardized root mean square residual (SRMR) value is 0.06, which is below the acceptable threshold of 0.08, indicating that the model fits the observed data well according to PLS-SEM criteria.

Furthermore, the analysis shows that the path coefficients for all five sub-hypotheses meet the necessary statistical conditions in terms of t-value and p-value, and confirms the significant direct effect of each dimension of digital financial competence on digital financial services. Accordingly, all sub-hypotheses derived from the main effect hypothesis are supported.

Furthermore, the coefficient of determination (R^2) for the dependent variable is 0.927, indicating that the dimensions of digital financial literacy explain approximately 92% of the variation in digital financial services, while the remaining percentage accounts for other variables beyond the scope of this study.

Fourth axis

Conclusions and Recommendations

First: Conclusions

The findings of this field study allow making the following conclusions about digital financial awareness and its role in the achievement of digital financial services:

- 1- The findings of the research indicated that digital financial awareness has a strong influence on whether the banks in the research sample adopt digital financial services, which confirms the fact that high level of digital financial knowledge and skills encourages the adoption of these services.
- 2- The research revolutionized that the digital financial literacy of customers in the sector has not been as high as it should be despite the high growth witnessed in the provision of digital financial services by the private banks.
- 3- Digital security and ease of use are some of the most persuasive in the choice of people to adopt digital financial services as customers prefer to use the services that are easy and secure.
- 4- The research found out that mobile digital financial services, i.e. e-wallets and banking applications are most utilized as opposed to other digital services.
- 5-Issues surrounding the safety and privacy of personal data and in particular some groups of age users have become key impediments to the implementation of digital financial services.
- 6- The findings affirmed that the extent of adoption of digital financial services among the bank customers differs. The difference is explained by the education levels, technical skills, and computerized financial awareness.

Second: Recommendations

Based on the findings made by this study, it is proposed to implement the following recommendations to improve the efficacy of digital financial awareness, thereby make it possible to achieve digital financial services:

- 1- The necessity to strengthen the digital financial awareness programs of the Iraqi private banks by means of the awareness and educational campaigns and training courses that instruct the customers on the use of the digital financial services safely and efficiently.
- 2-Still working on simplifying the design of the digital banking applications and enhance their user interfaces, which will help to increase the degree of customer acceptance and motivate them to use and embrace the services.
- 3- Secure the security systems and communicate the data protection rules to establish trust with the customers and provide secure usage of the digital financial services.
- 4-Getting the private banks to expand and diversify digital financial services, particularly mobile services, through the development of convenient and enjoyable applications to fulfill the needs of various members of the society.
- 5- The necessity of the Central Bank of Iraq to be significant and proactive in advancing the transition to the automation of digital banking by preparing the accurate regulatory law that promotes the usage of digital financial services.
- 6- Enhancing self-protection by developing digital financial awareness among individuals, as awareness of the risks associated with digital information security and financial fraud, and ways to prevent them, contributes to reducing fears. Therefore, the researcher recommends proposing a future study that addresses cybersecurity as an obstacle or catalyst for digital financial adoption.

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